

LED BEAM MOVING HEAD 84

User's Manual



SM-LED-84

Professional Entertainment Technology

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1.Safety Instruction



Please read carefully the instruction,which includes importa information about the installation.usage and maintenance

WARNING

- Please keep this User Guide for future consultation.If you sell the unit to anot user,be sure that they also receive this instruction booklet
- Unpack and check carefully there is no transportation damage before using the unit.
- Before operating,ensure that the voltage and frequency of power supply mat the power requirements of the unit
- It's important to ground the yellow/green conductor to earth in order to avoid electric shock.
- The unit is for indoor use only.Use only in a dry location
- The unit must be installed in a location with adequate ventilation,at least 50cm from adjacent surfaces.Be sure that no ventilation slots are blocked
- Disconnect main power before replacement or servicing.
- Make sure there is no flammable materials close to the unit while operating as is fire hazard.
- Use safety cable when fixes this unit.Don't handle the unit by taking its head only,But always by taking its base.
- Maximum ambient temperature is ta:40°C. Don't operate it where the temperature is higher than this.
- Unit surface temperature may reach up to 85°C.Dont touch the housing bare-hand during its operation.Turn off the power and allow about 15 minute for the unit to cool down before replacing or serving.
- In the event of serious operating problem,stop using the unit immediately.Ne try to repair the unit by yourself.Repairs carried out by unskilled people can le to damage or malfunction.Please contact the nearest authorized technical assistance center.Always use the same type Spare parts.

Warning

- To prevent or reduce the risk of electrical shock or fire,do not expose the unit rain or moisture.
- Do not open the unit within five minutes after switching off.

● The housing, the lenses, or the ultraviolet filter must be replaced if they are visibly damaged.

Caution

There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event your unit may require service, please contact your nearest dealer.

Installation

The unit should be mounted via its screw holes on the bracket. Always ensure that the unit is firmly fixed to avoid vibration and slipping while operating. And make sure that the structure to which you are attaching the unit is secure and is able to support a weight of 10 times of the unit's weight. Also always use a safety cable hold 12 times of the weight of the unit when installing the fixture.

The equipment must be fixed by professionals. And it must be fixed at a place where is out of the touch of people and has no one pass by or under it.

2. Technical Specification

- ◇ Extremely small, fast and powerful LED Moving beam.
- ◇ DMX Channels: 9/12/16CH
- ◇ Pan/Tilt: 630°/240° speed adjustable
- ◇ Smooth electronic dimming: 0-100%
- ◇ Electronic strobe with pulse and random effects
- ◇ High efficiency, low power consumption
- ◇ Super compact, low weight

Voltage: 100V-240V, 50/60Hz

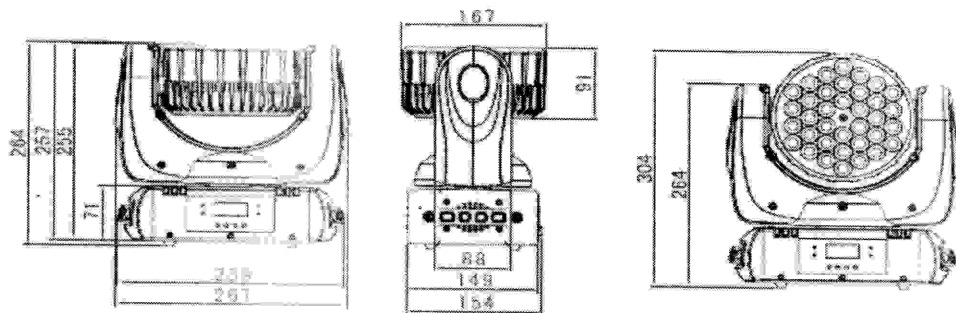
Fuse: T6.3A

Power consumption: 280W

Light source: 3W LED x 84 (R21, G22, B20, W21)

Dimension: 410x390x285mm

Weight: 8kg



Photometric diagram:



3. How To Set The Unit

3.1 Control Panel



Display

To show the various menus and the selected functions

LED

DMX	On	DMX input Present
MASTER	On	Master Mode
SLAVE	On	Slave Mode
SOUND	Flashing	Sound activation

Button

MENU	To select the programming functions
DOWN	To go backward in the selected functions
UP	To go forward in the selected functions
ENTER	To confirm the selected functions

Mains Input

Connect to power supply.

Mains Output

Connect to supply power to the next unit

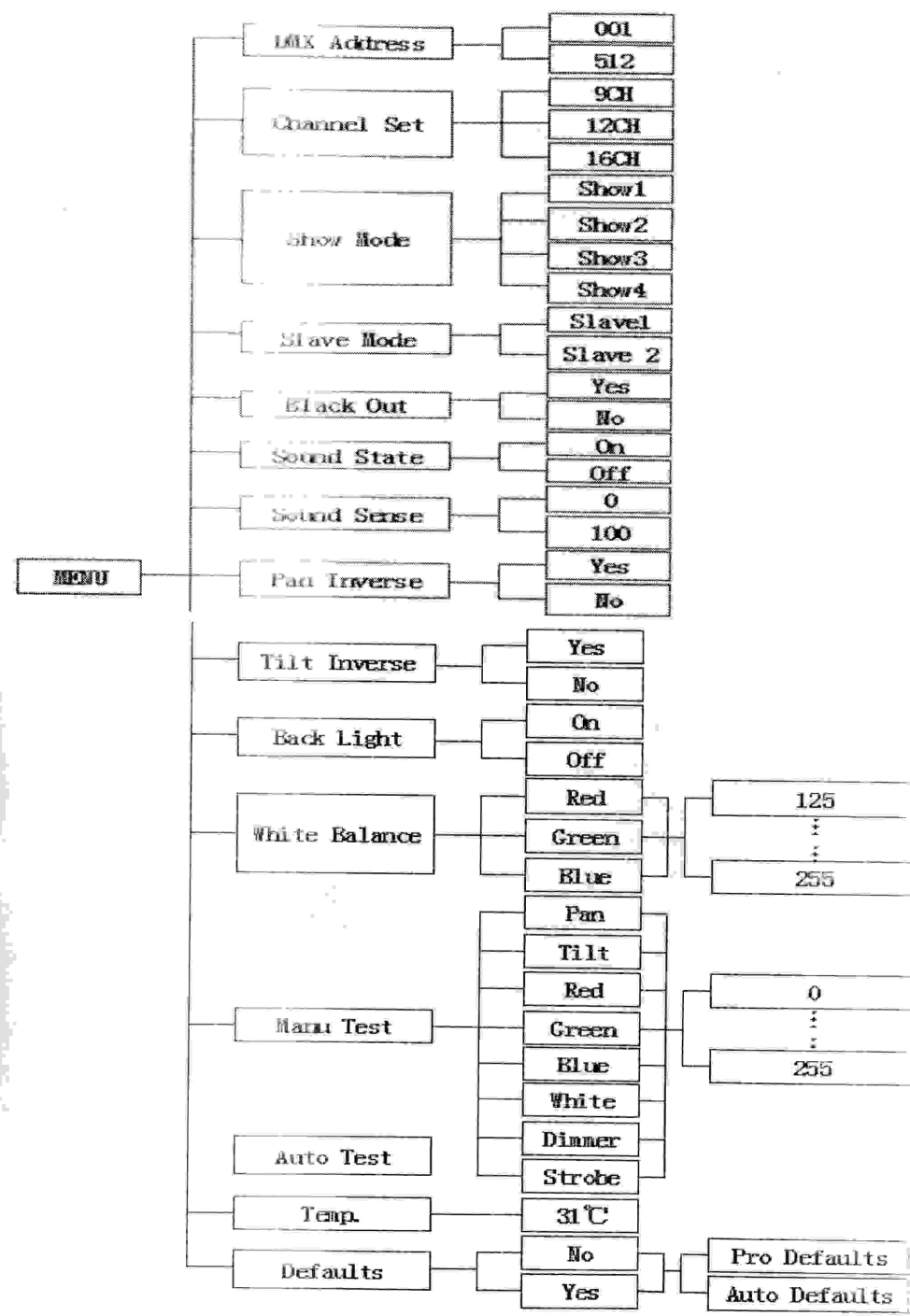
DMX Input / Output

For DMX512 link, use 3/5-pin XLR cable to link the unit together

3.2 Main Function

To select any of the given functions, Press the **MENU** button up to when the required one is showing on the display. Select the function by **ENTER** button and the display will blink. Use **DOWN** and **UP** button to change the mode. Once the required mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

The main functions are showing below:



DMX Address

Select **DMX Address**, Press the **ENTER** button to confirm, the present address will blink on the display. Use the **UP** and **DOWN** button to adjust the address from 1 to 512. Once the address has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Channel Set

Select **Channel Set**, Press the **ENTER** button to confirm, the present set will blink on the display. Use the **UP** and **DOWN** button to select channel 9/12/16. Once the set has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Show Mode

Select **Show Mode**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Show 1** or **Show 2** or **Show 3** or **Show 4** mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Slave Mode

Select **Slave Mode**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Slave 1**(normal) or **Slave 2** (2 light show) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Black Out

Select **Slave Mode**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Yes**(yes blackout) or **No** (no blackout) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Sound State

Select **Sound State**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **On**(Sound On) or **Off** (Sound Off) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Sound Sense

Select **Sound Sense**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **0...100** mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Pan Inverse

Select **Pan Inverse**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Yes**(Pan Inversion) or **No**((Normal) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Tilt Inverse

Select **Tilt Inverse**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Yes**(Tilt Inversion) or **No**((Normal) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Back Light

Select **Back Light**, Press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **On**(LED On) or **Off**((LED Off) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Function Delay

Select **Function Delay**, press **ENTER** button to confirm, present mode will blink on the display. Use **DOWN** and **UP** button to select the **No Delay** or **1S/2S/3S Delay** (Wait for 1/2/3 seconds before these Functions of 12CH are activated/deactivated) mode. Once the mode has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

White Balance

Select **White Balance**, press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Red** or **Green** or **Blue**. Once the mode has been selected, press the **ENTER** button to setup, use the **DOWN** and **UP** button to change the value (125~255). Once the mode has been selected, press the **ENTER** button to setup, go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

Manu Test

Select **Manu Test**, press the **ENTER** button to confirm, present mode will blink on the display. Use the **DOWN** and **UP** button to select the **Pan/ Tilt/ Red/ Green/ Blue/ White/Dimmer** or **Strobe**. Once the mode has been selected, press the **ENTER** button to setup, use the **DOWN** and **UP** button to change the value (0~255). Once the mode has been selected, press the **ENTER** button to setup, go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

Auto-Test

Press the **MENU** button up to when the **Auto-Test** is blinking on the display. Pressing **ENTER** button and the unit will run self-test by built-in program. To go back to the functions press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Temperature

Press the **MENU** button up to when the **Temperature Test** is blinking on the display. Pressing **ENTER** button and the display will show the temperature of the unit. To go back to the functions press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Defaults Setting

Press the **MENU** button to show **Defaults** on the display. Press the **ENTER** button and the display will blink. Use the **DOWN** and **UP** button to select the **YES** or **NO**. Once the **Yes** has been selected, press the **ENTER** button and use the **UP** and **Down** button to select the **PRO Defaults** or **AUTO Defaults**.

PRO Defaults: For professional users, detailed explanation as followings

- ① Slave Mode ↕ Slave 1
- ① Black Out Ⓞ Yes
- ① Sound State Ⓞ Off
- ① Pan Inverse Ⓞ No
- ① Tilt Inverse Ⓞ No
- ① Back Light Ⓞ Off
- ① Function Delay ↕ 3S Delay

AUTO Defaults: Mostly automatic mode, for non professional users, detailed explanation as followings.

- ① Slave Mode ↕ Slave 1
- ① Black Out Ⓞ No
- ① Sound State Ⓞ On
- ① Pan Inverse Ⓞ No
- ① Tilt Inverse Ⓞ No
- ① Back Light Ⓞ On

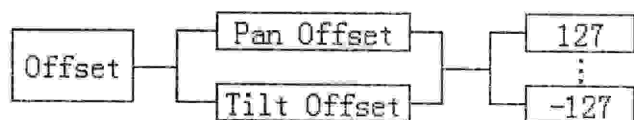
(Notice:Other settings are NOT changed while choosing Defaults Setting!)

Press the **ENTER** and the corresponding functions will set to defaults setting,to go back to the functions without any change press the **MENU** button again.Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

Reset

Press the **MENU** button up to when the **Reset** is blinking on the display.Pressing **ENTER** button and all channels of the unit will return to their standard position.

3.3 Home Position Adjust



In the main functions,hold **ENTER** button for at least 3 seconds into offset mode, use **DOWN** and **UP** button up to chose **Pan Offset** or **Tilt Offset**,Pressing **ENTER** button and the display will blink.Use **DOWN** and **UP** button to adjust the home position of the Pan,Tilt,Once the opposition has been selected,press the **ENTER** button to setup,to go back to the functions without any change press the **MENU** button again.Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode

4.How to Control The Unit

You can operate the unit in two ways:

1. Master/Slave built-in preprogram function
2. Universal DMX controller

No need to turn the unit off when you change the DMX address,as new DMX address setting will be effect at once.Every time you turn the unit on,it will show "**M108RGBW**" on the display and move all the motors to their "**HOME**" position and you may hear some noises for about 20 seconds.After that the unit will be ready to receive DMX signal or run the built in programs.

4.1 Master/Slave Built In preprogrammed Function

By lining the units in master/slave connection,the first unit will control the other to give an automatic,sound activated,synchronized light show.This function is used when you want an instant show.You have to set the first unit in master mode **Slave Mode** and select **Show 1** or **Show 2** or **Show 3** or **Show 4** mode.Its DMX input will have nothing plugged into it,and its master LED will be constantly on and slave LED will flash to the music.The other units will have to set in **Slave mode** and select **Slave 1**(normal) or **Slave 2**(2 light show)mode,Their DMX cables plugged into the DMX input jacks(daisy chain) and the slave led lights will constantly on.

2-light show

In **Slave mode**,**Slave 1** means the unit works normally and **Slave 2** means 2-light show.In order to create a great light show,you can set **Slave 2** on the second unit to get contrast movement to each other,even if you have two units only

4.3 DMX Controller

By using a universal DMX Controller to control the units, you will need to set DMX address from 1 to 512 so that the units can receive DMX signal

Press the **MENU** button up to when the **DMX Address** is showing on the display. Pressing **ENTER** button and the display will blink. Use **DOWN** and **UP** button to change the DMX512 address. Once the address has been selected, press the **ENTER** button to setup, to go back to the functions without any change press the **MENU** button again. Hold and press the **MENU** button about one second or wait for one minute to exit the menu mode.

Please refer to the following diagram to address your DMX512 channel for the first 4 units.

Channel mode	Unit 1 Address	Unit 2 Address	Unit 3 Address	Unit 4 Address
9 channels	1	10	19	28
12 channels	1	13	25	37
16 channels	1	17	33	49

4.4 DMX 512 Configuration

9 Channel Mode:

Channel List	Value	Function
CH1	000-255	Pan(0-630)
CH2	000-255	Tilt(0-240)
CH3	000-255	Strobe
CH4	000-255	Red (0%-100%)
CH5	000-255	Green (0%-100%)
CH6	000-255	Blue (0%-100%)
CH7	000-255	White (0%-100%)
CH8	000-255	Dimmer (0%-100%)
CH9	000-255	Sound active

12 Channel Mode:

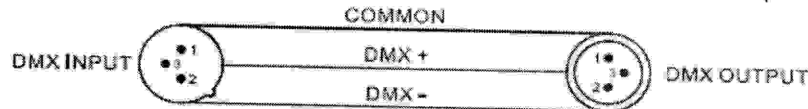
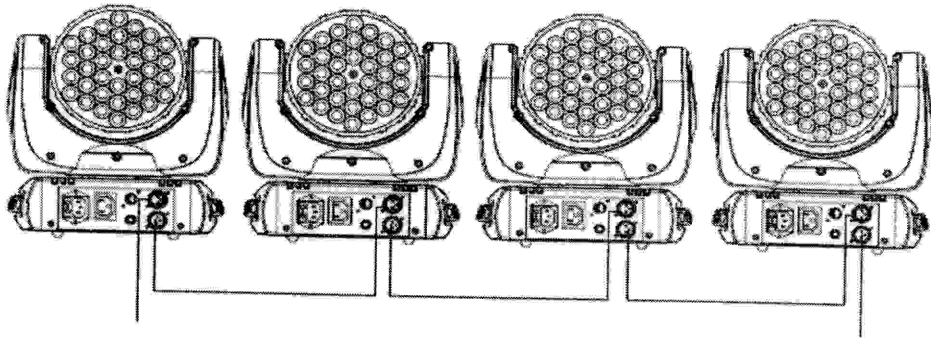
Channel List	Value	Function
CH1	000-255	Strobe Effect
CH2	000-255	Dimmer (0%-100%)
CH3	000-255	Pan(0-630)

CH4	000-255	Pan Fine(Least significant bit)
CH5	000-255	Tilt (0-240)
CH6	000-255	Tilt Fine(Least significant bit)
CH7	000-255	Sound activation
CH8	000-255	Color Effect
CH9	000-255	Red (0%-100%)
CH10	000-255	Green (0%-100%)
CH11	000-255	Blue (0%-100%)
CH12	000-255	White (0%-100%)

16 Channel Mode:

Channel List	Value	Function
CH1	000-255	Pan(0-630)
CH2	000-255	Pan Fine(Least significant bit)
CH3	000-255	Tilt (0-240)
CH4	000-255	Tilt Fine(Least significant bit)
CH5	000-255	Pan & Tilt Speed
CH6	000-255	Pan & Tilt Auto Run
CH7	000-255	Auto Run Speed
CH8	000-255	Auto Run Color Open
CH9	000-255	Dimmer (0%-100%)
CH10	000-255	Strobe
CH11	000-255	Red (0%-100%)
CH12	000-255	Green (0%-100%)
CH13	000-255	Blue (0%-100%)
CH14	000-255	White (0%-100%)
CH15	000-255	Color Auto Run
CH16	000-255	Color Auto Run Speed

4.5 DMX512 Connection



Termination reduces signal errors and avoids signal transmission problems and interference. It is always advisable to connect a DMX terminal. (Resistance 120 ohm 1/4W) between pin2(DMX-) and pin3(DMX+) of the last fixture.



1. If you using a controller with 5 pins DMX output,you need to use a 5 to 3 pin adapter-cable
2. At last unit,the DMX cable has to be terminated with a terminator. Solder a 120 ohm 1/4W resistor between pin 2(DMX-)and pin 3(DMX+)into a 3-pin XLR-plug and plug it in the DMX-output of the last unit
3. Connect the unit together in a daisy chain by XLR plug from the output of the unit to the input of the next unit.The cable can not branched or split to a 'Y'cable.DMX512 is a very high-speed signal.Inadequate or damaged cables,soldered joints or corroded conectors can easily distort the signal and shut down the systems.
4. The DMX output and input connectors are pass-through to maintain the DMX circuit,when one of the units power is disconnected.
5. Each lighting unit needs to have an address set to receive the data sent by the controller.The address number is between 0-511(usually 0 & 1 are equal to 1.)
6. The end of the DMX512 system should be terminated to reduce signal errors
7. 3 pin XLR connector are more popular than 5 pin XLR
3 pin XLR:Pin 1:GND,Pin 2:Negative signal(-),Pin 3:Positive signal(+)
5 pin XLR:Pin 1:GND,Pin 2:Negative signal(-),Pin 3:Positive signal(+),
Pin 4/ Pin 5:Not used

5.Troubleshooting

Following are a few common problems that may occur during operation.Here are some suggestions for easy troubleshooting

A. The unit does not work,no light and the fan does not work

1. Check the connection of power and main fuse
2. Measure the mains voltage on the main connector
3. Check the power on LED.

B. Not responding to DMX controller

1. DMX LED should be on. If not, check DMX connectors, cables to see if properly
2. If the DMX LED is on and no response to the channel, check the address setting and DMX polarity.
3. If you have intermittent DMX signal problems, check the pins on connector on PCB of the unit or the previous one.
4. Try to use another DMX controller
5. Check if the DMX cables run near or run alongside to high voltage cables may cause damage or interference to DMX interface circuit.

C. Some units don't's respond to the easy controller

1. You may have a break in the DMX cabling. Check the LED for the response to the Master/Slave mode signal.
2. Wrong DMX address in the unit. Set the proper address.

D. No response to the sound

1. Make sure the unit does not receive DMX Signal
2. Check microphone to see if it is good by tapping the microphone

E. One of the channels is not working well

1. The stepper motor might be damaged or cable connected to PCB is wrong
2. The motor's drive IC on the PCB might be out of condition

6. Fixture Cleaning

The cleaning of internal and external optical lenses and/or mirrors must be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates: damp, smoky or particularly dirty surrounding can cause greater accumulation of dirt on the units's optics

- Clean with soft cloth using normal glass cleaning fluid.
- Always dry the parts carefully
- Clean the external optics at least every 20 days. Clean the internal optics at least every 30/60 days

EC-Declaration of Conformity

We declare that our products (lighting equipments) comply with the following specification and bears CE mark in accordance with the provision of the Electromagnetic Compatibility (EMC) Directive 89/336/EEC.

**EN55014-2:1997A1:2001;EN61000-4-2:1995;EN61000-4-3:2002;
EN61000-4-4:1995;EN61000-4-5:1995;EN61000-4-6:1996,
EN61000-4-11:1994**

&

Harmonized Standard

**EN60598-1:2000+ALL:2000+A12:2002
Safety of household and similar electrical appliances
Part 1:General requirements**